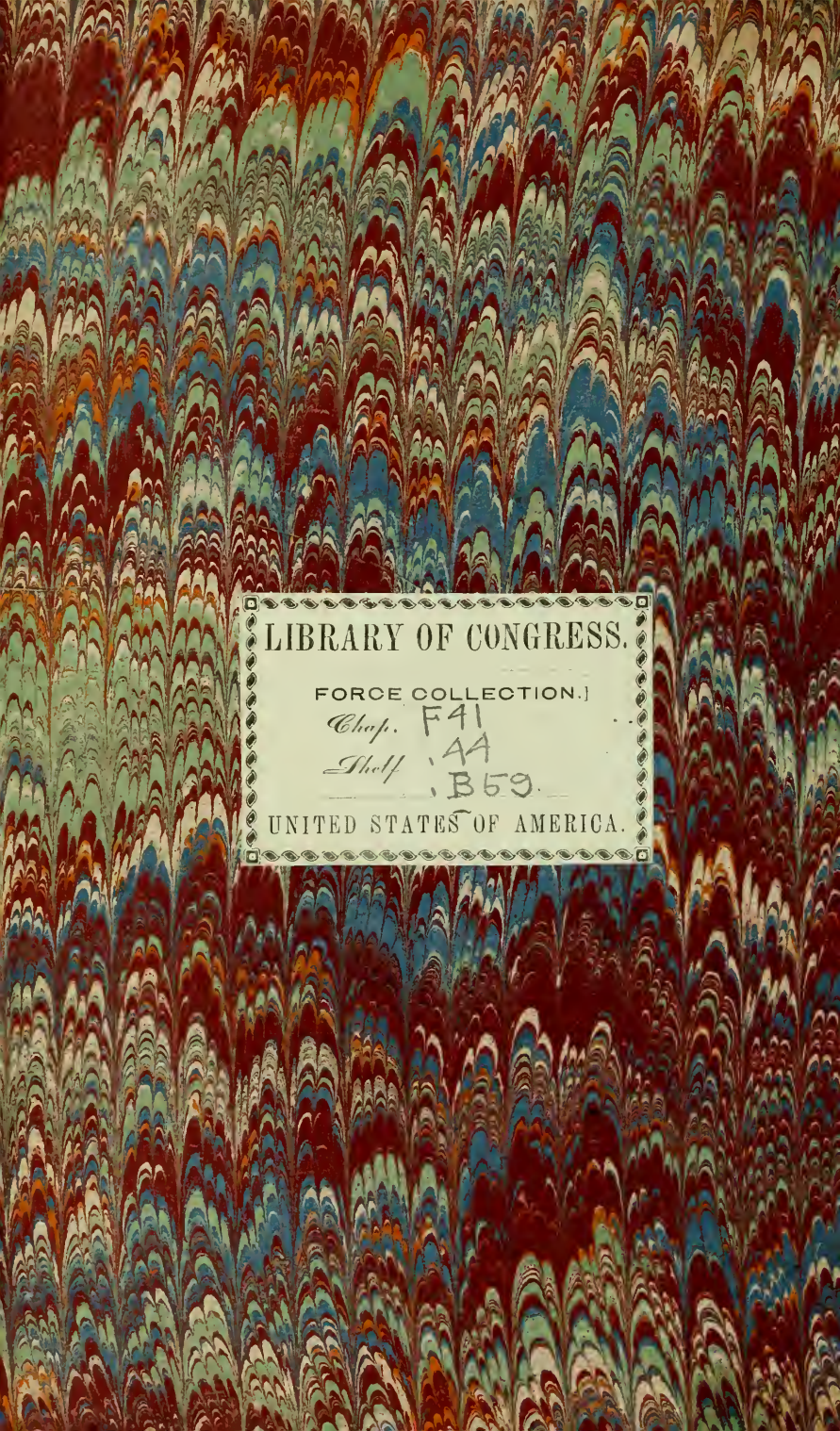


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SOME ACCOUNT  
OF THE  
WHITE MOUNTAINS  
OF  
NEW HAMPSHIRE.

By JACOB BIGELOW, M. D. *Lecturer on Materia Medica, and Botany, in  
Harvard University.*

[From the New-England Journal of Medicine and Surgery, for  
October, 1816.]

THE terms mountain and hill are words altogether relative in their signification, and are variously used in different parts of the world, according to the experience and conceptions of those who apply them. In this country, elevations which are known only as hills, would in Great Britain assume the character of mountains; while on the other hand, our highest summits dwindle to an inferior size, when contrasted with the peaks and ridges of Switzerland, of Tibet, and Peru. The face of the country in many parts of the United States is uneven, rugged, and precipitous; its chains of highlands occasionally shoot up into eminences which are conspicuous at a great distance, and which are long and difficult of ascent. But the highest of these elevations has no claim to be considered a mountain even of secondary size, when compared with others which may be found in every quarter of the globe. The surface of the lake of Lausanne, in France, is higher than any mountain in the United States, and the City of Riobamba in Peru is built at an elevation more than twice as great.\*

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\* Jameson's Mineralogy, Vol. III.

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It is not however for their great elevation alone, that mountains become interesting to the naturalist and traveller. Those of minor or secondary size, are equally objects of curiosity, and often furnish to the explorer more satisfactory results. The mediocrity of their height renders them of course more accessible, and more susceptible of investigation in all their parts. Being short of the limits of perpetual snow, they are covered with vegetables, wherever the earth on them is sufficiently deep. The prospect from such mountains, as Baron Humboldt has observed, is far more interesting, than that from extreme elevations, where the scenery of the adjacent country is lost and confounded by the remoteness of its situation.

In the United States, exclusive, or possibly inclusive, of Louisiana, the highest point or ridge of land is undoubtedly that of the White mountains in New Hampshire. From the earliest settlement of the country these mountains have attracted the notice of the inhabitants, and of mariners along the coast, by the distance at which they are visible, and the whiteness of their appearance during three quarters of the year. They were for a long time the subject of fabulous representations; the Indians had a superstitious dread of them, and travellers who occasionally ascended their summits, returned with exaggerated reports of the difficulty and distance, as well as of the strange productions found on the more elevated parts of their surface.

The earliest account of an ascent of the White mountains is given in Gov. Winthrop's Journal, and appears to have taken place in the year 1642. This account is somewhat curious, if not otherwise, at least for its antiquity.\*

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\* "One Darby Field, an Irishman, living about Piscat, being accompanied with two Indians, went to the top of the White Hill. He made his journey in eighteen days. His relation at his return was, that it was about 160 miles from Saco, that after 40 miles travel, he did for the most part ascend; and within 12 miles of the top, was neither tree nor grass, but low savins, which they went upon the top of sometimes, but a continual ascent upon rocks, on a ridge between two vallies filled with snow, out of which came two branches of the Saco river, which met at the foot of the hill where was an Indian town of some 200 people. Some of them accompanied him within 8 miles of the top, but durst go no further, telling him that no Indian ever dared to go higher, and that he would die if he went. So they

Within the last 40 years the White mountains have been repeatedly ascended by different exploring parties, and several accounts of their productions and phenomena have been published. The object of this paper is to detail such observations as were made by a party from Boston, who visited them in the beginning of July of the last summer.

These mountains are situated in Lat. about  $44^{\circ} 15'$  N. and Long.  $71. 20.$  W. from Greenwich. They are distant about 150 miles from Boston. Their Indian name according to Dr. Belknap, was Agiocochook.

Our approach to them was made from the North west, commencing at the town of Lancaster, a village situated on the Connecticut river, 25 miles from their base. From this town a road has been cut, passing through a gap of the mountains to Portland, and constituting the principal outlet of the Coos country. This road takes the course of the Israel's river, a

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staid there till his return, and *his* two Indians took courage by his example and went with him. They went divers times through the thick clouds for a good space, and within 4 miles of the top, they had no clouds but very cold. By the way among the rocks, there were two ponds, one a blackish water, and the other reddish. The top of all was plain, about 60 feet square. On the north side was such a precipice as they could scarcely discern the bottom. They had neither cloud nor wind on the top, and moderate heat. All the country about him seemed a level, except here and there a hill rising above the rest, and far beneath them. He saw to the north, a great water which he judged to be 100 miles broad, but could see no land beyond it. The sea by Saco seemed as if it had been within 20 miles. He saw also a sea to the eastward which he judged to be the gulph of Canada; he saw some great waters in parts to the westward, which he judged to be the great lake Canada river comes out of. He found there much Muscovy glass, they could rive out pieces 40 feet long, and 7 or 8 broad. When he came back to the Indians, he found them drying themselves by the fire, for they had a great tempest of wind and rain. About a month after, he went again with five or six of his company, then they had some wind on the top, and some clouds above them, which hid the sun. They brought some stones which they supposed had been diamonds, but they were most chrystal."—*Winthrop's Journal*, p. 247.

The relation of Darby Field, may be considered as in the main correct, after making reasonable deductions for the distance, the length of the Muscovy glass, and the quantity of water in view, which it may be suspected has not been seen by any visitor since his time.

branch of the Connecticut, passing between the Pliny mountains on the left and the Pondicherry mountain on the right. The village of Lancaster is situated in a valley surrounded in several directions by very elevated ridges of land. A number of the summits in sight of this place could not be estimated at less than 3,000 feet in height, judging from the experience we had acquired of several hills of known altitude on the road, and the accounts given by the inhabitants of the time necessary for their ascent and descent.

The road from Lancaster passes through Jefferson, (formerly Dartmouth) Bretton woods and Nash and Sawyer's location, to the Notch of the mountains. This road in its course runs over the foot of the Pondicherry mountain. It lies for most of the way through thick woods but rarely enlivened with the appearance of cultivation. At Playstead's house, 13 miles from their base we had a fair view of the White Hills. They presented the appearance of a continued waving range of summits, of which it was difficult to select the highest. At Rosebrooks,  $4\frac{1}{2}$  miles from the Notch, the view of them was very distinct and satisfactory. We could now clearly discern the character of the summits, five or six of which were entirely bald and presented the appearance of a grey and ragged mass of stones towering above the woods, with which the sides and base were clothed. In several places we observed a broad continued stripe descending the mountain and having the appearance of a regular road cut through the trees and rocks from near the base to the summit of the mountain. On examining these with a telescope they were found to be channels of streams, and in several, the water could be seen dashing down the rocks.

Between Rosebrooks and the Notch is a plain, or rather a swamp, the waters of which pass off in different directions, partly to the Ammonoosuck, a branch of the Connecticut, and partly by an opposite course to the Saco. After crossing several brooks running towards the former, we came to another stream, the water of which was so sluggish that it required some time to become satisfied that it was actually flowing in the opposite direction. This stream has its origin in a pond of one or two acres, situated near the road, and having no other inlet or outlet. This pond appears to be the principal source of the Saco river.



The waters of this stream being collected from several sources proceed directly toward the side of the mountain. At the point where to all appearance they must be intercepted in their course, there occurs one of the most extraordinary features of the place, well known by the name of the Notch. The whole mountain, which otherwise forms a continued range, is here cloven down quite to its base, affording a free opening to the waters of the Saco, which pass off with a gradual descent toward the sea. This gap is so narrow that space has with difficulty been obtained for the road, which follows the course of the Saco through the Notch eastward. In one place the river disappears, being lost in the caves and crevices of the rocks, and under the shelves of the adjoining precipice, at length reappearing at the distance of some rods below. The Notch gradually widens into a long narrow valley, in the lower part of which is situated the town of Bartlett.

There is no part of the mountain more calculated to excite interest and wonder than the scenery of this natural gap. The crags and precipices on both sides rise at an angle of great steepness, forming a support or basement for the lofty and irregular ridges above. One of the most picturesque objects in our view was a cliff presenting a perpendicular face of great height and crowned at its inaccessible summit with a profusion of flowering shrubs.\* For many miles below the commencement of the Notch the eye meets on both sides a succession of steep and precipitous mountains, rising to the height of some thousands of feet, and utterly inaccessible from the valley below. The sides of these mountains consist in some parts of bald rock, streaked or variegated by the trickling of water, in others they are covered with trees and shrubs. The occasional torrents formed by the freshets in the spring have in many places swept away the stones and trees from their course, for a great distance, and left the vestiges of their way in a wide path or gully over naked rocks.

In some instances the fire had run over the sides of the mountain, destroying the vegetation and leaving the dead trunks of the trees standing like stubble in a field, and presenting a singular appearance of desolation for some miles in ex-

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\* *Rhodora Canadensis*, in full flower June 20th.

tent. Several brooks, the tributaries of the Saco, fall down the abrupt declivities, forming a succession of beautiful cascades in sight of the road. We were told that the wind sweeps through the Notch at times with great violence. The lightning is said to strike frequently in the mountains from the clouds about their sides, and the sound of the thunder in this place is represented as unusually loud and severe. The report of a musket discharged in the Notch, was followed by a long echo, reverberated for some time from both sides of the mountain.

The White Hills have been ascended by various routes, from their different sides. The course which is usually considered as attended with the least difficulties, is that which commences at the plain of Pigwacket, at present the town of Conway, and follows the course of Ellis river, a northern branch of the Saco, having its origin high in the mountain.

The place of leaving the road, to follow the track of this stream is in the town of Adams, about 20 miles from the summit of the highest part of the mountain. Of this distance seven or eight miles may be rode over on horseback, the rest must be performed on foot. After leaving the borders of cultivation, our course lay through thick woods, on a level or with a gentle ascent, not much encumbered with an under growth of bushes, for six miles. The walking was tolerably good, except the circumstance of being obliged once or twice to ford the streams. Our encampment for the night, was made at the mouth of New river, a principal branch of the Ellis. This river takes its name from the recency of its origin, which happened in October, 1775. At this time, during a great flood, that took place in consequence of heavy rains, a large body of waters, which had formerly descended by other channels, found their way over the eastern brink of the mountains, and fell down toward the Ellis, carrying the rocks and trees before them in their course, and inundating the adjacent country. By this freshet the banks of the Saco were overflowed, cattle were drowned, and fields of corn were swept away and destroyed. Since that period, the New river has remained a constant stream, and at the place where it descends the last precipice, forms a splendid cascade of 100 feet in height.

From this encampment, which was seven miles from the top of the mountain, we proceeded the next day, (July 2,) two or

three miles by the side of Ellis river, on a gradual ascent, occasionally encumbered by the trunks of fallen trees. We now left the Ellis, for one of its principal branches, called Cutler's river, leading directly towards the principal summit. After climbing by the side of this stream for a considerable distance, the trees of the forest around us began to diminish in height, and we found ourselves at the second zone or region of the mountain. This region is entirely covered with a thick low growth of evergreens, principally the black spruce, and silver fir, which rise to about the height of a man's head, and put out numerous, strong, horizontal branches, which are closely interwoven with each other, and surround the mountain with a formidable hedge a quarter of a mile in thickness. This zone of evergreens, has always constituted one of the most serious difficulties in the ascent of the White Hills. The passage through them is now much facilitated by a path cut by the direction of Col. Gibbs, who ascended the mountain some years since.

On emerging from this thicket, the barometer stood at 25, 93, giving our elevation above the sea, at 4,443 feet. We were now above all woods, and at the foot of what is called the bald part of the mountain. It rose before us with a steepness surpassing that of any ground we had passed, and presented to view a huge, dreary, irregular pile of dark naked rocks.

We crossed a plain or gentle slope, of a quarter of a mile, and began to climb upon the side. There was here a continued and laborious ascent of half a mile, which must be performed by cautiously stepping from one rock to another, as they present themselves like irregular stairs, winding on the broken surface of the mountain. In the interstices of these rocks were occasional patches of dwarfish fir and spruce, and beautiful tufts of small alpine shrubs, then in full flower.

Having surmounted this height we found ourselves on a second plain. This like the first, was covered with withered grass, and a few tufts of flowers. Its continuity is interrupted by several declivities, one of which we descended to our left, to reach a brook that crosses it here, from the rocks above. There remained now to be ascended only the principal peak, the one designated in Winthrop's Journal, by the name of the *sugar loaf*, and in Belknap's New-Hampshire, by the name of

Mount Washington. This we accomplished in half an hour, by climbing the ridge to the north of it, and walking on this ridge to the summit.

If the traveller could be transported at once to the top of this mountain, from the country below, he would no doubt be astonished and delighted at the magnitude of his elevation, at the extent and variety of the surrounding scenery, and above all, by the huge and desolate pile of rocks, extending to a great distance in every direction beneath him, and appearing to insulate him from the rest of the world. But the length and fatigue of the approach, the time occupied in the ascent, the gradual manner in which the prospect has been unfolding itself, are circumstances which leave less novelty to be enjoyed at the summit, than at first view of the subject, would be expected.

The day of our visit was uncommonly fine, yet the atmosphere was hazy, and our view of remote objects, was very indistinct. The Moosehillock, one of the highest mountains of New-Hampshire, situated in Coventry, near the Connecticut, was visible on the south. The Kyarsarge, Double headed Mountains, and several others were in full view at the east. The country around in almost every direction, is uneven and mountainous. Its appearance is described by Josselyn, in his "Rarities of New-England," published in 1672, who says that the country beyond the mountains to the northward, "is daunting terrible, being full of rocky hills, as thick as mole hills in a meadow; and clothed with infinite thick woods."\*

Our anticipations were not realized, in regard to several phenomena, we had been taught to expect at the summit. The state of the air was mild and temperate, so that the over coats which we carried up in expectation of extreme cold, were

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\* Messrs J. W. and F. Boott, who have visited the mountains since, and found the atmosphere very clear on the summit at half past 7 A. M. have favoured me with the following bearings of objects in sight. The sea, supposed near Portland S. E. by E.—Lake Winipisseogee S. S. W.—A long hill having an eminence at each extremity, said by the guide to be the highest in Vermont, W. by S. a little S.—Sebago Lake S. E.  $\frac{1}{2}$  E. McMillans Inn. Conway, S. by E.  $\frac{1}{2}$  E.—The second highest summit of the White Hills N. N. E. by E. This summit is separated from the one called Mount Washington, by a gulph opening eastwardly. It is very lofty, falling but little below a horizontal line obtained by a level on the former place.



left at the foot of the last ascent. The thermometer stood at 57, Fahr. on the summit at 12 o'clock, and on the same day at Conway, 25 miles distant, on the plain below, it was at 80. The snow lay in patches of an acre in extent upon the sides, but appeared to be rapidly dissolving. We were not conscious of any material alteration in the density of the atmosphere, as neither sound nor respiration were perceptibly impeded. Instead of an absence from these barren regions, of animal and vegetable life; we found a multitude of insects, buzzing around the highest rocks; every stone was covered with lichens, and some plants were in flower in the crevices, within a few feet of the summit.

The ascent from our encampment at the mouth of New river, including stops, had employed us six hours and a half. The descent from the summit to the same place, occupied about five hours. We left on the mountain our names and the date, inclosed in a bottle, and cemented to the highest rock.\*

*Height of the White Mountains.* The great distance at which these mountains are visible, and the apparent length of their ascent, have led to estimates of their height considerably exceeding the probable truth. The Rev. Dr. Cutler, who twice visited them, and took barometrical observations, computes the height in round numbers, at 10,000 feet above the level of the sea. Dr. Belknap, in his history of New Hampshire, is persuaded, that this computation is too moderate, and that subsequent calculations will make the height even greater. Mr. Bowditch has published in the transactions of the American Academy, a logarithmic calculation founded on the barometer, as observed by Dr. Cutler and Professor Peck, in 1804, which gives them an elevation of 7,055.

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\* Parce, viator,  
cui fulmina parent.—  
Hoc fragile monumentum  
Lemuel Shaw,  
Nathaniel Tucker,  
Jacob Bigelow,  
Franciscus C. Gray,  
Franciscus Boott,  
Bostonienses;  
Die Julii 2do. A. D. 1816,  
Monte Agiocochock superato,  
hic reliquerunt.

Capt. Partridge, an engineer in the United States' service, visited the mountain some years since, and took barometrical observations on several of the principal peaks. His observations now in possession of Professor Farrar at the University, give to the highest summit an elevation of only 6103 feet.

A mountain barometer, of Englefield's construction, carried by Mr. Gray of our party, stood on the summit at noon at 24, 23; the accompanying thermometer being at 57. At the same day at Cambridge, the barometer stood at 29, 95, and the thermometer at 76. This difference of the barometer, after making the necessary corrections for temperature, and variation in the surface of the cistern, would give, according to Sir H. C. Englefield's formula, a difference of 6230 feet in the altitude of the two places. A logarithmic calculation was made, from the same data, by Professor Farrar, which resulted in a difference of 6194 feet. This number being added to thirty-one feet, the height of Cambridge above the sea, will give 6225 feet, which may be assumed as the probable height of the White Hills, above the waters of the ocean.

In favor of the correctness of the observations on which this computation is founded, it may be observed, that the barometer employed was of the most approved and modern construction, being guarded against accidents with an express view to its use in expeditions of this sort; that it went and returned without injury; and at the end of the journey agreed with other instruments at the University, precisely as it had done before its removal.

In confirmation of the present estimate, it may also be observed, that a geometrical admeasurement, taken by Dr. Shattuck and others from the plain in front of Rosebrook's house, gave to the summit an elevation of 4620 feet above that place. This being added to 1648, the barometrical height of Rosebrook's above the sea, will give a total of 6268 feet, differing only forty-three feet from our estimate.

W. Maclure, Esq. author of the geological map of the United States, informs me, that from two geometrical admeasurements made some years since on the eastern and western sides of the mountain, he arrived at results nearly similar.

*Minerals.* The White Mountains when viewed from the westward, present a long ridge bounded by an undulating or

serpentine line. On a near view, the outline is found to be notched and ragged, but wholly destitute of sharp cliffs and needles, or sudden perpendicular eminences. When the mountain is ascended, its uppermost or bald portion, 1800 feet in height, is found to consist wholly of a loose, irregular, disconnected heap of rocks, of all shapes and dimensions, from one to thirty feet in diameter, lying confusedly one above another, but all resting firmly in their places, having found situations where they can resist the torrents, that roll over them, in descending the sides of the mountain at certain seasons of the year. These rocks are of gneiss and micaceous schistus, or rather of an intermediate substance between the two, approaching sometimes the one and sometimes the other. The mica is abundant and brilliant, but its stratification is uneven and irregular, and often interrupted by thin strata of quartz. Owing to the irregular position of the rocks, their strata are found resting in every possible direction. Large veins of quartz very frequently traverse them, and specimens of pure mica may occasionally be obtained, the plates of which are several inches in diameter. There is nothing in the colour of the rocks, which can in any way account for the white appearance of the mountains, since they are uniformly incrustated with dark grey Lichens, which give them an almost blackish appearance. Their distant white appearance can only be accounted for by the presence of snow, which covers the summits for two thirds or more of the year. In summer, their remote appearance is blue, like that of other distant objects.

In the middle and lower parts of the mountain, the character of micaceous slate, which in the course we took, appeared to be the predominant constituent of the mountain, is more perfectly formed. The strata are remarkably smooth and even, and their fissure presents the most brilliant silvery lustre. The bed of the cascade at New River, was principally of this material, intersected by thick veins of quartz, in which were contained large crystals of schorl. The pebbles in the streams, were chiefly of micaceous slate, and occasionally of gneiss, of granite and of pure white quartz. We also met with hornblende containing traces of carbonate of lime.

The object of most of our party being botanical, and our course generally rapid, the observations and collections, we were

able to make in mineralogy, were necessarily limited. George Gibbs, Esq. who has twice ascended the mountain on different sides, with a view to the examination of its geology, has favoured me with the following remarks made by him at the time. In some places where the geology of the mountain was exposed, he found the lower strata of greenstone and greenstone slate, with some granite. Higher up, granite and gneiss prevailed. The greenstone is fine grained, containing pyrites. The greenstone slate contains actinote. The granite contains emerald, tourmaline, white quartz and feldspar, white and reddish mica, and garnets of different sizes. The granite is distinctly stratified. The strata of these rocks are from six inches to many feet in thickness, the granite being thickest, generally two or three feet. The dip of the strata is small and from the mountain. The rock on the summit and for some hundred feet below, was gneiss, afterwards granite prevailed. Near the notch Col. Gibbs observed rocks of coarse reddish jasper and porphyry, and obtained from the inhabitants specimens of fluor spar and magnetic iron ore.

*Plants.* The vegetation of the White Hills has been divided with propriety, into three zones. 1. That of the common forest trees; 2. that of dwarf evergreens; and 3. that of Alpine plants.

The woods which extend from the base up the sides to the height of about 4000 feet from the sea, consist of the Rock-maple (*Acer saccharinum*,) which is the most abundant tree, the Red-maple (*Acer rubrum*,) the Silver-fir (*Pinus balsamea*,) the Hemlock (*Pinus Canadensis*,) the Black and White-spruce (*Pinus nigra et alba*,) the White-pine (*Pinus strobus*,) the Beech (*Fagus ferruginea*,) the Black, Yellow and White-birch (*Betula lenta, lutea, and papyracea*.) The undergrowth was composed principally of the *Viburnum lantanoides*, the *Acer montanum* and *striatum*, and *Sorbus Americana*. Under our feet was the *Oxalis acetosella* beyond every other species of plant, *Dracena borealis*, *Cornus Canadensis*, *Gaultheria hispidula*, &c.

Where the common forest trees terminate, the second zone of the mountain immediately commences, the line between them being very distinctly drawn. This region consists of a belt of the black-spruce and silver-fir, rising to the height of seven or eight feet, and putting out long, firm, horizontal, or depending branches, so that each tree covers a considerable extent of



ground. This mode of growth may be ascribed to two causes : 1. The great length of time that the snow rests upon them, weighing down their branches, and confining them in an horizontal direction. 2. The extreme cold which probably prevails here in winter, and which is destructive to all vegetation, that is not secured by being buried under the snow. Upon the ground under these evergreen trees, there were but few other vegetables. The only plants which I recollect in flower were the *Houstonia cœrulea* uncommonly large, and *Cornus Canadensis*.

Above the zone of firs, which terminates as abruptly as it begun, is a third or bald region wholly destitute of any growth of wood. The predominance of rocks on this portion, leaves but a scanty surface covered with soil capable of giving root to vegetation ; yet to the botanist this is by far the most interesting part of the mountain. Many of the plants of this region, are rare, and not to be found in the region below. They are for the most part natives of cold climates and situations, such as are found in high latitudes, or at great elevations. Among them are natives of Siberia, of Lapland, of Greenland and Labrador. Vegetables of this race, usually known by the name of Alpine plants, have always been found difficult of cultivation. They are impatient of drought, and of both the extremes of heat and cold. During the severity of the winter, in their native situations, they are preserved from injury by the great depth of snow, under which they are covered, which secures them from the inclemency of the air, while they partake the temperature of the earth below them. When the snow leaves them, which frequently does not happen till the middle of summer, they instantly shoot up with a vigour proportionate to the length of time they have been dormant ; rapidly unfold their flowers, and mature their fruits ; and having run through the whole course of their vegetation in a few weeks, are again ready to be entombed, for the rest of the year, under their accustomed covering of snow. These plants, notwithstanding the high and barren elevations at which they frequently grow, do not suffer for want of moisture, being constantly irrigated by the clouds which embrace them, and by the trickling of water over their roots from the eminences above.

The following list contains most of the plants, which we found on the uppermost or bald portion of the mountain. For a considerable increase of the collection, I am indebted to my friend,

Mr. F. Boott, whose botanical zeal induced him to undertake a second visit to the summit in August. *In flower.*

*Aira melicoides.* Mx. - - - August 25.

*Arenaria glabra.* Mx. - - - August 25.

*Arenaria* seu *Stellaria*,—*caule anguloso; foliis oblongis, acutis, enervibus; pedunculis solitariis elongatis; floribus apetalis.* August 25.

*Azalea Lapponica.* L. - - - July 2.

*Azalea procumbens.* L. - - - July 2.

*Bartsia pallida.* L. - - - August 25.

*Betula lutea.* Mx. *nana.*

*Campanula rotundifolia.* L. - - August 25.

*Cardamine rotundifolia.* Mx. - - July 2.

*Carex curta.* Willd. - - August 25.

*Carex cæspitosa.* L. - - July and August.

*Coptis trifolia.* Salisb. - - July 2.

*Cornus Canadensis.* L. - - July 2.

*Diapensia Lapponica.* L. - - July and August.

*Epilobium alpinum.* L. - - August 25.

*Empetrum nigrum.* L. - - August 25.

*Geum Peckii.* Pursh - - July and August.

*Holcus monticola*—*glumis trifloris, hermaphrodito intermedio diandro, masculis lateralibus triandris, vulvulâ exteriori dorso aristata.* - - - July 2.

*Houstonia cærulea.* L. - - July 2.

*Juncus melanocarpus.* Mx. - - July 2.

*Juncus spicatus.* L. - - August 25.

*Kalmia glauca.* L. - - July 2.

*Ledum latifolium.* Ait. - - July and August.

*Lycopodium lucidulum.* Mx

*Melica triflora*—*villosa, panicula coarctata, glumis trifloris, corpuseulo accessorio; flosculis aristatis.* - - - August.

*Menziesia cærulea.* Swz. (*Erica, Willd.*) July 2.

*Oxycoccus vulgaris.* Pers. - - July and August.

*Pinus nigra.* L. *nana.*

*Pinus balsamea.* L. *nana.*

*Polygonum viviparum.* Willd. - - August 25.

*Potentilla tridentata.* Ait. - - July.

Rubus saxatilis. L.	- - - -	August 25.
Salix repens. Willd.	- - - -	July 2.
Scirpus obtusus— <i>Culmo tereti, nudo, monostachyo; spica lanceolata, squamis apice carnosius, obtusis.</i>	- - - -	July.
Scirpus bracteatus— <i>Culmo tereti, monostachyo; spica ovata, acuta, bracteis involucratis; flosculis monandris.</i>	- - -	August.
Spiræa alba. Ehr.	- - - -	August 25.
Solidago multiradiata. Ait	- - -	August 24.
Sorbus americana. Willd. nana		
Vaccinium tenellum. Ait	- - -	July 2.
Vaccinium gaultherioides— <i>prostratum, foliis obovatis, integris; floribus subsolitariis; baccis oblongis, stylo coronatis.</i>	- - -	July 2.
Veratrum viride? Wild. s. fl.		
Lichen velleus, rangiferinus., pyxidatus, coccyferus, Islandicus, cornutus, & alii plures.		
Indeterminatæ Salix 1. Poa 1. Menziesia? 1.		

The vegetation in spots extended quite to the top of the mountain. Diapensia Lapponica and Lycopodium lucidulum, the former in full flower, were growing within six feet of the summit. All the rocks were incrustated with Lichens, among which L. velleus is the one which predominates, and contributes essentially to the dark grey appearance of the mountain.

In the foregoing list of vegetables, it will be seen that a considerable number of species are natives of Europe, as well as of this country. A question of some interest has arisen, whether any plants are originally common to both continents,\* and whether those species which approach each other so nearly in their external characters, as to be known at present by the same names, are in reality the same species. The analogy of the animal kingdom seems to favour the negative of this question. Baron Humboldt has asserted upon the highest authorities. that no quadruped, or terrestrial bird, and even no reptile or insect, has been found common to the equinoctial regions of the old and new world. In like manner he affirms that the phanerogamous plants, which have been recognized as natives

\* Humboldt.—Memoir on the distribution of vegetable forms.

of the tropical regions of both continents, are extremely few. In the temperate zones, the number of American plants which wear European names, is continually diminishing in books. The separation of them, has in some instances been carried further than a strict adherence to the present grounds of botanical distinction will justify. Yet there still remain species wholly agreeing in their botanical characters, but sufficiently differing in their qualities, places of growth, times of flowering &c. to render it not improbable that they are distinct. A species of *Æthusa* grows about Boston, which externally bears, the strictest comparison with *Æthusa cynapium* of Europe. It is however altogether destitute of the nauseous or garlic taste for which that plant is noted. *Menyanthes trifoliata* in New-England, flowers a month earlier than in Great Britain, though our seasons are perhaps always more backward. Botanists have not yet distinguished the chesnut tree of this country from that of Europe, although its wood is weak and brittle, and never used, as in Europe, for hoops and other purposes, where strength and tenacity are required. On grounds like the foregoing a great number of vegetables which have not emigrated to us since the discovery of America, and which are not found far to the north of us, may be suspected of being really distinct in nature from those which nearly resemble them in Europe, and are known by the same names.\*

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\* Still we should strictly beware of hastily changing names, and establishing new species on slight or doubtful distinctions. Botany at present, knows no other mode of distinguishing plants, than that by their external forms, and to this, in the present state of the science, we must rigidly adhere. If an American plant cannot readily be distinguished from an European, by a clear specific character no harm can ensue, and much confusion may be avoided, by suffering it to remain as a variety, under that same specific name. A zeal for the discovery and establishment of new species, however laudable in its general object, has been productive of much mischief to the Botany of this country. We have had many specific names founded in varieties, and many accompanied with hasty and imperfect descriptions, which leave it doubtful whether they refer to species or varieties. Different Botanists without communication or intercourse with each other, have described the same plants under different names, and different plants under the same names in various parts of the country. There is at present, no greater obstacle to the progress of Botany here, than the load of uncertain synonyms, doubtful species, and superfluous names with which many of our best books are encumbered.



But as we approach toward the north, and arrive in high latitudes, the probability of finding plants identically the same, is greatly increased. About the arctic circle, the two continents approach each other so nearly, and are so connected by ice during part of the year, that they may, as far as botany is concerned, be considered the same country. The same plants may be equally disseminated on both, and these may extend as far toward the south as the general coldness of the climate suited to their constitution continues. Beyond this they may for some distance be found in alpine situations on the tops of the highest mountains. There are also plants of such versatility of constitution, that they bear all the varieties of climate from Hudsons Bay, to Virginia, and Carolina. Such plants may well be common to the two continents.

*Animals.* The unsettled state of the country for some distance around these mountains, the many recesses and solitudes which they possess, that are rarely visited by man; has rendered them still a resort for many of the original animals of the continent, whose species have nearly disappeared from the more inhabited parts. The moose (*cervus alces?*) still resides here, and we were told, that upon the Pliny, mountains about twenty miles to the N. W. some of these animals are killed in the course of every winter. The bear (*ursus Americanus*) inhabits the woods about the base and sides of the mountain, where he is not unfrequently met with.\* The wolves (*canis lupus*) being gregarious, move in troops, and are said to visit this part of the country once in three or four years. Several of them were killed last winter in Eaton, a town adjoining the mountains. The wolverene, (*ursus luscus*) raccoon, (*ursus lotor*) porcupine, (*hystrix dorsata*) and sable, the two latter in considerable numbers, are found in various parts of the forests; the wild-cat (*felis montana?*) is occasionally killed here; the catamount (*felis concolor* s. *couguar*) is at the present day seldom heard of.

Of Birds, we saw but few. Most of our migratory land birds choosing to share with man the fruits of his cultivation, are

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\* Our guide informed us that one had been in his enclosures the week preceding our visit.

more frequently found about the abodes of civilization, than in the solitude of the forest. In Bretton woods several woodpeckers were shot by our party, all of them very beautiful species, and among the rest *picus tridactylus* remarkably distinguished from the rest of his family by the number of his toes. The partridge (*tetrao umbellus*) we frequently scared. This bird, as well as a species of plover or of *tringa*, have been seen in the upper or bald part of the mountain.

We were told by the people in Bartlett and Conway, that the rattlesnake (*crotalus horridus*) infests the rocks and sides of the hills in great numbers, and that twenty of these reptiles had been killed in a day. They even approach dwelling houses, at the doors of which they have been killed. The inhabitants regard them with little apprehension, since they are represented as slow and clumsy in their motions, and as always giving notice on being approached, by a loud and long continued rattle, resembling very much the singing of a locust. We saw none of these serpents, and heard of no injury sustained by any one from their bite.

The insects which we observed at the top of the mountain, were as numerous and various as in any place below. Among them were species of *Phalæna*, *Cerambyx*, *Coccinella*, *Buprestis*, *Cimex* and *Tenthredo*. The most splendid of our native butterflies *Papilio Turnus* ? was fluttering near us while we remained on the summit.





































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